

eWon drivers - Driver Details Studer

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1. STUDER Driver Details

The Studer driver is based on the official Xtender serial protocol version 1.5.16.

The Studer driver supports:

- Single device addressing.
- Checksum validation.
- READ_PROPERTY service for Xtender user info object values.
- READ_PROPERTY service for Xtender parameter object values.
- WRITE_PROPERTY service for Xtender parameter object values.
- Data value formats.
- Error codes.

The Studer driver doesn't support:

- WRITE_PROPERTY service for Xtender parameter object minima.
- WRITE_PROPERTY service for Xtender parameter object maxima.
- WRITE_PROPERTY service for Xtender parameter object accessibility levels.

1.1. User info objects

Only the following user info objects are supported by the driver.

Postfix Tag Name	Object ID	Description	Engineering Unit	Format
BattV	3000	Battery voltage	V	FLOAT
BattTemp	3001	Battery temperature	°C	FLOAT
BattVTempComp	3002	Temperature compensation of battery voltage	Ctmp	FLOAT
BattVDynComp	3003	Dynamic compensation of battery voltage	Cdyn	FLOAT
BattChgI Wanted	3004	Wanted battery charge current	A	FLOAT
BattChgI	3005	Battery charge current	A	FLOAT
BattVRipple	3006	Battery voltage ripple	V	FLOAT
ChgSt	3007	State of charge	%	FLOAT
LowVDisconnect	3008	Low Voltage Disconnect	V	FLOAT
BattCyclePhase	3010	Battery cycle phase		ENUM
ACInVin	3011	Input voltage AC-In	V	FLOAT
ACInIin	3012	AC input current AC-In	A	FLOAT
ACInPin	3013	Input power AC-In	kVA	FLOAT
InputLimitValue	3017	Input limit value	A	FLOAT
PowerSharingOn	3018	Power sharing active		BOOL
BoostOn	3019	Boost active		BOOL
TransferRelaySt	3020	State of transfer relay		ENUM
ACOutVout	3021	Output voltage AC-Out	V	FLOAT
ACOutIout	3022	Output current AC-Out	A	FLOAT
ACOutPout	3023	Output power AC-Out	kVA	FLOAT
Fout	3024	Output frequency	Hz	FLOAT
OperatingSt	3028	Operating state		ENUM
OutputRelaySt	3030	State of output relay		ENUM
AuxRelay1St	3031	State of auxiliary relay I		ENUM

AuxRelay2St	3032	State of auxiliary relay II		ENUM
NbrOverloads	3045	Nbr. of overloads		FLOAT
NbrOvertemp	3046	Nbr. overtemperature		FLOAT
NbrBattOvervoltage	3047	Nbr. battery overvoltage		FLOAT
SystemSt	3049	State of the system		ENUM
BattElementsNr	3050	Number of battery elements		FLOAT
SearchModeSt	3051	Search mode state		ENUM
AuxRelay1Mode	3054	Relay aux I mode		ENUM
AuxRelay2Mode	3055	Relay aux II mode		ENUM
LockingsFlag	3056	Lockings flag		FLOAT
Dev1	3072	Dev 1		FLOAT
Dev2	3073	Dev 2		FLOAT
GroundRelaySt	3074	State of the ground relay		ENUM
NTransferRelaySt	3075	State of the neutral transfer relay		ENUM
PrevDayBattDisChg	3076	Discharge of battery of the previous day	kWh	FLOAT
DayBattDisChg	3078	Discharge of battery of the current day	kWh	FLOAT
PrevDayACInEnergy	3080	Energy from AC-In of the previous day	kWh	FLOAT
DayACInEnergy	3081	Energy from AC-In of the current day	kWh	FLOAT
PrevDayConsEnergy	3082	Consumers energy of the previous day	kWh	FLOAT
DayConsEnergy	3083	Consumers energy of the current day	kWh	FLOAT
Fin	3084	Input frequency	Hz	FLOAT
Fout	3085	Output frequency	Hz	FLOAT
RemoteEntrySt	3086	Remote entry state		ENUM
ActPout	3087	Output active power	W	FLOAT
ActPin	3088	Input active power	W	FLOAT
DefinedPhase	3089	Defined phase		FLOAT
DlgBattVmin	3090	Battery voltage (minute min)	V	FLOAT
DlgBattVmax	3091	Battery voltage (minute max)	V	FLOAT
DlgBattVavg	3092	Battery voltage (minute avg)	V	FLOAT
DlgBattChgImin	3093	Battery charge current (minute min)	A	FLOAT
DlgBattChgImax	3094	Battery charge current (minute max)	A	FLOAT
DlgBattChgIavg	3095	Battery charge current (minute avg)	A	FLOAT
DlgPoutMin	3096	Output power min (minute min)	kVA	FLOAT
DlgPoutMax	3097	Output power (minute max)	kVA	FLOAT
DlgPoutAvg	3098	Output power (minute avg)	kVA	FLOAT
DlgActPoutMin	3099	Output active power (minute min)	kW	FLOAT
DlgActPoutMax	3100	Output active power (minute max)	kW	FLOAT
DlgActPoutAvg	3101	Output active power (minute avg)	kW	FLOAT
DlgDev1Min	3102	Dev 1 (minute min)		FLOAT
DlgDev1Max	3103	Dev 1 (minute max)		FLOAT
DlgDev1Avg	3104	Dev 1 (minute avg)		FLOAT
DlgDev2Min	3105	Dev 2 (minute min)		FLOAT

DlgDev2Max	3106	Dev 2 (minute max)		FLOAT
DlgDev2Avg	3107	Dev 2 (minute avg)		FLOAT
DlgFoutMin	3108	dlg: Output frequency min	Hz	FLOAT
DlgFoutMax	3109	dlg: Output frequency max	Hz	FLOAT
DlgFoutAvg	3110	dlg: Output frequency avg	Hz	FLOAT
DlgVinMin	3111	dlg: Input voltage min	V	FLOAT
DlgVinMax	3112	dlg: Input voltage max	V	FLOAT
DlgVinAvg	3113	dlg: Input voltage avg	V	FLOAT
DlgIinMin	3114	dlg: Input current min	A	FLOAT
DlgIinMax	3115	dlg: Input current max	A	FLOAT
DlgIinAvg	3116	dlg: Input current avg	A	FLOAT
DlgActPinMin	3117	dlg: Input active power min	kW	FLOAT
DlgActPinMax	3118	dlg: Input active power max	kW	FLOAT
DlgActPinAvg	3119	dlg: Input active power avg	kW	FLOAT
DlgFinMin	3120	dlg: Input frequency min	Hz	FLOAT
DlgFinMax	3121	dlg: Input frequency max	Hz	FLOAT
DlgFinAvg	3122	dlg: Input frequency moy	Hz	FLOAT
DlgRelaysSt	3123	dlg: Relays state		FLOAT
IdType	3124	ID Type		FLOAT
IdP	3125	ID Power	VA	FLOAT
IdVout	3126	ID Uout	V	FLOAT
IdBattV	3127	ID battery voltage	V	FLOAT
IdIoutNominal	3128	ID Iout nominal	A	FLOAT
IdHw	3129	ID HW		FLOAT
IdSoftMsb	3130	ID SOFT msb		FLOAT
IdSoftLsb	3131	ID SOFT lsb		FLOAT
IdHwPwr	3132	ID HW PWR		FLOAT
ParameterNumber	3133	Parameter number (in code)		FLOAT
InfoUserNr	3134	Info user number		FLOAT
IdSid	3135	ID SID		FLOAT
ActPout	3136	Output active power	kW	FLOAT
ActPin	3137	Input active power	kW	FLOAT
Pin	3138	Input power	kVA	FLOAT
Pout	3139	Output power	kVA	FLOAT
SystemDebug1	3140	System debug 1		FLOAT
SystemDebug2	3141	System debug 2		FLOAT
SystemState	3142	System state machine		FLOAT

1.2. Parameter objects

For security reasons, eWON tags referring to parameter objects are not provided in the example `var_lst.csv` file. Only the following parameter objects are supported by the driver.

Postfix Tag Name	Object ID	Description	Format
Param1551	1551	Basic parameters set by means of the potentiometer in the XTS	BOOL
Param1107	1107	Maximum current of AC source (Input limit)	FLOAT
Param1138	1138	Battery charge current	FLOAT
Param1126	1126	Smart-Boost allowed	BOOL
Param1124	1124	Inverter allowed	BOOL
Param1552	1552	Type of detection of the grid loss (AC-In)	ENUM
Param1187	1187	Standby level	FLOAT
Param1395	1395	Restore default settings	INT32
Param1287	1287	Restore factory settings	INT32
Param1125	1125	Charger allowed	BOOL
Param1138	1138	Battery charge current	FLOAT
Param1139	1139	Temperature compensation	FLOAT
Param1615	1615	Fast charge/inject regulation	BOOL
Param1108	1108	Battery undervoltage level without load	FLOAT
Param1191	1191	Battery undervoltage dynamic compensation	BOOL
Param1532	1532	Kind of dynamic compensation	ENUM
Param1109	1109	Battery undervoltage level at full load	FLOAT
Param1190	1190	Battery undervoltage duration before turn off	FLOAT
Param1110	1110	Restart voltage after batteries undervoltage	FLOAT
Param1194	1194	Battery adaptive low voltage (B.L.O)	BOOL
Param1195	1195	Max voltage for adaptive low voltage	FLOAT
Param1307	1307	Reset voltage for adaptive correction	FLOAT
Param1298	1298	Increment step of the adaptive low voltage	FLOAT
Param1121	1121	Battery overvoltage level	FLOAT
Param1122	1122	Restart voltage level after an battery overvoltage	FLOAT
Param1140	1140	Floating voltage	FLOAT
Param1467	1467	Force phase of floating	INT32
Param1142	1142	Force a new cycle	INT32
Param1608	1608	Use dynamic compensation of battery level (new cycle)	BOOL
Param1143	1143	Voltage level 1 to start a new cycle	FLOAT
Param1144	1144	Time period under voltage level 1 to start a new cycle	FLOAT
Param1145	1145	Voltage level 2 to start a new cycle	FLOAT
Param1146	1146	Time period under voltage level 2 to start a new cycle	FLOAT
Param1149	1149	New cycle priority on absorption and equalization phases	BOOL
Param1147	1147	Cycling restricted	BOOL
Param1148	1148	Minimal delay between cycles	FLOAT
Param1155	1155	Absorption phase allowed	BOOL

Param1156	1156	Absorption voltage	FLOAT
Param1157	1157	Absorption duration	FLOAT
Param1158	1158	End of absorption triggered with current	BOOL
Param1159	1159	Current limit to quit the absorption phase	FLOAT
Param1160	1160	Maximal frequency of absorption control	BOOL
Param1161	1161	Minimal delay since last absorption	FLOAT
Param1163	1163	Equalization allowed	BOOL
Param1162	1162	Force equalization	INT32
Param1291	1291	Equalization before absorption phase	BOOL
Param1290	1290	Equalization current	FLOAT
Param1164	1164	Equalization voltage	FLOAT
Param1165	1165	Equalization duration	FLOAT
Param1166	1166	Number of cycles before an equalization	FLOAT
Param1284	1284	Equalization with fixed interval	BOOL
Param1285	1285	Weeks between equalizations	FLOAT
Param1168	1168	End of equalization triggered with current	BOOL
Param1169	1169	Current threshold to end equalization phase	FLOAT
Param1170	1170	Reduced floating allowed	BOOL
Param1171	1171	Floating duration before reduced floating	FLOAT
Param1172	1172	Reduced floating voltage	FLOAT
Param1173	1173	Periodic absorption allowed	BOOL
Param1174	1174	Periodic absorption voltage	FLOAT
Param1175	1175	Reduced floating duration before periodic absorption	FLOAT
Param1176	1176	Periodic absorption duration	FLOAT
Param1124	1124	Inverter allowed	BOOL
Param1286	1286	AC Output voltage	FLOAT
Param1548	1548	AC voltage increase according to battery voltage	BOOL
Param1560	1560	Max AC voltage increase with battery voltage	FLOAT
Param1112	1112	Inverter frequency	FLOAT
Param1536	1536	Inverter frequency increase when battery full	BOOL
Param1549	1549	Inverter frequency increase according to battery voltage	BOOL
Param1546	1546	Max frequency increase	FLOAT
Param1534	1534	Speed of voltage or frequency change in function of battery	FLOAT
Param1187	1187	Standby level	FLOAT
Param1189	1189	Time delay between standby pulses	FLOAT
Param1188	1188	Standby number of pulses	FLOAT
Param1599	1599	Softstart duration	FLOAT
Param1438	1438	Solsafe presence Energy source at AC-Out side	BOOL
Param1572	1572	Modulator ru_soll	BOOL
Param1128	1128	Transfer relay allowed	BOOL
Param1580	1580	Delay before closing transfer relay	FLOAT
Param1126	1126	Smart-Boost allowed	BOOL

Param1607	1607	Limitation of the power Boost	FLOAT
Param1107	1107	Maximum current of AC source (Input limit)	FLOAT
Param1566	1566	Using a secondary value for the maximum current of the AC source	BOOL
Param1567	1567	Second maximum current of the AC source (Input limit)	FLOAT
Param1527	1527	Decrease max input limit current with AC-In voltage	BOOL
Param1554	1554	Decrease of the max. current of the source with input voltage activated by command entry	BOOL
Param1309	1309	AC input low limit voltage to allow charger function	FLOAT
Param1433	1433	Adaptation range of the input current according to the input voltage	FLOAT
Param1553	1553	Speed of input limit increase	FLOAT
Param1295	1295	Charge current decrease coef. at voltage limit to turn back in inverter mode	FLOAT
Param1436	1436	Overrun AC source current limit without opening the transfer relay (Input limit)	BOOL
Param1552	1552	Type of detection of the grid loss (AC-In)	ENUM
Param1510	1510	Tolerance on detection of AC-input loss (tolerant UPS mode)	FLOAT
Param1199	1199	Input voltage giving an opening of the transfer relay with delay	FLOAT
Param1198	1198	Time delay before opening of transfer relay	FLOAT
Param1200	1200	Input voltage giving an immediate opening of the transfer relay (UPS)	FLOAT
Param1432	1432	Absolute max limit for input voltage	FLOAT
Param1500	1500	Standby of the charger allowed	BOOL
Param1505	1505	Delta frequency allowed above the standard input frequency	FLOAT
Param1506	1506	Delta frequency allowed under the standard input frequency	FLOAT
Param1507	1507	Duration with frequency error before opening the transfer	FLOAT
Param1625	1625	Delta from user frequency to start derating	FLOAT
Param1626	1626	Delta from user frequency to reach 100% derating	FLOAT
Param1575	1575	AC-IN current active filtering	BOOL
Param1557	1557	Use an energy quota on AC-input	BOOL
Param1559	1559	AC-in energy quota	FLOAT
Param1604	1604	External transfert management	BOOL
Param1202	1202	Operating mode (AUX 1)	ENUM
Param1497	1497	Combination of the events for the auxiliary contact (AUX 1)	ENUM
Param1205	1205	Temporal restrictions Program 1 Day of the week (AUX 1)	ENUM
Param1206	1206	Temporal restrictions Program 1 Start hour (AUX 1)	INT32
Param1207	1207	Temporal restrictions Program 1 End hour (AUX 1)	INT32
Param1209	1209	Temporal restrictions Program 2 Day of the week (AUX 1)	ENUM
Param1210	1210	Temporal restrictions Program 2 Start hour (AUX 1)	INT32
Param1211	1211	Temporal restrictions Program 2 End hour (AUX 1)	INT32
Param1213	1213	Temporal restrictions Program 3 Day of the week (AUX 1)	ENUM
Param1214	1214	Temporal restrictions Program 3 Start hour (AUX 1)	INT32
Param1215	1215	Temporal restrictions Program 3 End hour (AUX 1)	INT32
Param1217	1217	Temporal restrictions Program 4 Day of the week (AUX 1)	ENUM
Param1218	1218	Temporal restrictions Program 4 Start hour (AUX 1)	INT32
Param1219	1219	Temporal restrictions Program 4 End hour (AUX 1)	INT32

Param1221	1221	Temporal restrictions Program 5 Day of the week (AUX 1)	ENUM
Param1222	1222	Temporal restrictions Program 5 Start hour (AUX 1)	INT32
Param1223	1223	Temporal restrictions Program 5 End hour (AUX 1)	INT32
Param1271	1271	Contact active with a fixed time schedule Program 1 Day of the week (AUX 1)	ENUM
Param1272	1272	Contact active with a fixed time schedule Program 1 Start hour (AUX 1)	INT32
Param1273	1273	Contact active with a fixed time schedule Program 1 End hour (AUX 1)	INT32
Param1275	1275	Contact active with a fixed time schedule Program 2 Day of the week (AUX 1)	ENUM
Param1276	1276	Contact active with a fixed time schedule Program 2 Start hour (AUX 1)	INT32
Param1277	1277	Contact active with a fixed time schedule Program 2 End hour (AUX 1)	INT32
Param1279	1279	Contact active with a fixed time schedule Program 3 Day of the week (AUX 1)	ENUM
Param1280	1280	Contact active with a fixed time schedule Program 3 Start hour (AUX 1)	INT32
Param1281	1281	Contact active with a fixed time schedule Program 3 End hour (AUX 1)	INT32
Param1225	1225	Xtender is OFF (AUX 1)	BOOL
Param1518	1518	Xtender ON (AUX 1)	BOOL
Param1543	1543	Remote entry (AUX 1)	BOOL
Param1226	1226	Battery undervoltage alarm (AUX 1)	BOOL
Param1227	1227	Battery overvoltage (AUX 1)	BOOL
Param1228	1228	Inverter or Smart- Boost overload (AUX 1)	BOOL
Param1229	1229	Overtemperature (AUX 1)	BOOL
Param1520	1520	No overtemperature (AUX 1)	BOOL
Param1231	1231	Active charger (AUX 1)	BOOL
Param1232	1232	Active inverter (AUX 1)	BOOL
Param1233	1233	Active Smart-Boost (AUX 1)	BOOL
Param1234	1234	AC input presence but with fault (AUX 1)	BOOL
Param1235	1235	AC input presence (AUX 1)	BOOL
Param1236	1236	Transfer relay ON (AUX 1)	BOOL
Param1237	1237	AC out presence (AUX 1)	BOOL
Param1238	1238	Bulk charge phase (AUX 1)	BOOL
Param1239	1239	Absorption phase (AUX 1)	BOOL
Param1240	1240	Equalization phase (AUX 1)	BOOL
Param1242	1242	Floating (AUX 1)	BOOL
Param1243	1243	Reduced floating (AUX 1)	BOOL
Param1244	1244	Periodic absorption (AUX 1)	BOOL
Param1601	1601	AC-in energy quota (AUX1)	BOOL
Param1288	1288	Use dynamic compensation of battery level (AUX 1)	BOOL
Param1246	1246	Battery voltage 1 activate (AUX 1)	BOOL
Param1247	1247	Battery voltage 1 (AUX 1)	FLOAT
Param1248	1248	Delay 1 (AUX 1)	FLOAT
Param1249	1249	Battery voltage 2 activate (AUX 1)	BOOL
Param1250	1250	Battery voltage 2 (AUX 1)	FLOAT
Param1251	1251	Delay 2 (AUX 1)	FLOAT

Param1252	1252	Battery voltage 3 activate (AUX 1)	BOOL
Param1253	1253	Battery voltage 3 (AUX 1)	FLOAT
Param1254	1254	Delay 3 (AUX 1)	FLOAT
Param1255	1255	Battery voltage to deactivate (AUX 1)	FLOAT
Param1256	1256	Delay to deactivate (AUX 1)	FLOAT
Param1516	1516	Deactivate if battery in floating phase (AUX 1)	BOOL
Param1258	1258	Inverter power level 1 activate (AUX 1)	BOOL
Param1259	1259	Power level 1 (AUX 1)	FLOAT
Param1260	1260	Time delay 1 (AUX 1)	FLOAT
Param1261	1261	Inverter power level 2 activate (AUX 1)	BOOL
Param1262	1262	Power level 2 (AUX 1)	FLOAT
Param1263	1263	Time delay 2 (AUX 1)	FLOAT
Param1264	1264	Inverter power level 3 activate (AUX 1)	BOOL
Param1265	1265	Power level 3 (AUX 1)	FLOAT
Param1266	1266	Time delay 3 (AUX 1)	FLOAT
Param1267	1267	Inverter power level to deactivate (AUX 1)	FLOAT
Param1268	1268	Time delay to deactivate (AUX 1)	FLOAT
Param1446	1446	Contact activated with the temperature of battery (AUX 1)	BOOL
Param1447	1447	Contact activated over (AUX 1)	FLOAT
Param1448	1448	Contact deactivated below (AUX 1)	FLOAT
Param1439	1439	Contact activated with the SOC 1 of battery (AUX 1)	BOOL
Param1440	1440	Contact activated below SOC 1 (AUX 1)	FLOAT
Param1581	1581	Delay 1 (AUX 1)	FLOAT
Param1582	1582	Contact activated with the SOC 2 of battery (AUX 1)	BOOL
Param1583	1583	Contact activated below SOC 2 (AUX 1)	FLOAT
Param1584	1584	Delay 2 (AUX 1)	FLOAT
Param1585	1585	Contact activated with the SOC 3 of battery (AUX 1)	BOOL
Param1586	1586	Contact activated below SOC 3 (AUX 1)	FLOAT
Param1587	1587	Delay 3 (AUX 1)	FLOAT
Param1441	1441	Contact deactivated over SOC (AUX 1)	FLOAT
Param1588	1588	Delay to deactivate (AUX 1)	FLOAT
Param1589	1589	Deactivate if battery in floating phase (AUX 1)	BOOL
Param1512	1512	Security, maximum time of contact (AUX 1)	BOOL
Param1514	1514	Maximum time of operation of contact (AUX 1)	FLOAT
Param1569	1569	Reset all settings (AUX 1)	INT32
Param1311	1311	Operating mode (AUX 2)	ENUM
Param1498	1498	Combination of the events for the auxiliary contact (AUX 2)	ENUM
Param1314	1314	Temporal restrictions Program 1 Day of the week (AUX 2)	ENUM
Param1315	1315	Temporal restrictions Program 1 Start hour (AUX 2)	INT32
Param1316	1316	Temporal restrictions Program 1 End hour (AUX 2)	INT32
Param1318	1318	Temporal restrictions Program 2 Day of the week (AUX 2)	ENUM
Param1319	1319	Temporal restrictions Program 2 Start hour (AUX 2)	INT32

Param1320	1320	Temporal restrictions Program 2 End hour (AUX 2)	INT32
Param1322	1322	Temporal restrictions Program 3 Day of the week (AUX 2)	ENUM
Param1323	1323	Temporal restrictions Program 3 Start hour (AUX 2)	INT32
Param1324	1324	Temporal restrictions Program 3 End hour (AUX 2)	INT32
Param1326	1326	Temporal restrictions Program 4 Day of the week (AUX 2)	ENUM
Param1327	1327	Temporal restrictions Program 4 Start hour (AUX 2)	INT32
Param1328	1328	Temporal restrictions Program 4 End hour (AUX 2)	INT32
Param1330	1330	Temporal restrictions Program 5 Day of the week (AUX 2)	ENUM
Param1331	1331	Temporal restrictions Program 5 Start hour (AUX 2)	INT32
Param1332	1332	Temporal restrictions Program 5 End hour (AUX 2)	INT32
Param1380	1380	Contact active with a fixed time schedule Program 1 Day of the week (AUX 2)	ENUM
Param1381	1381	Contact active with a fixed time schedule Program 1 Start hour (AUX 2)	INT32
Param1382	1382	Contact active with a fixed time schedule Program 1 End hour (AUX 2)	INT32
Param1384	1384	Contact active with a fixed time schedule Program 2 Day of the week (AUX 2)	ENUM
Param1385	1385	Contact active with a fixed time schedule Program 2 Start hour (AUX 2)	INT32
Param1386	1386	Contact active with a fixed time schedule Program 2 End hour (AUX 2)	INT32
Param1388	1388	Contact active with a fixed time schedule Program 3 Day of the week (AUX 2)	ENUM
Param1389	1389	Contact active with a fixed time schedule Program 3 Start hour (AUX 2)	INT32
Param1390	1390	Contact active with a fixed time schedule Program 3 End hour (AUX 2)	INT32
Param1333	1333	Xtender is OFF (AUX 2)	BOOL
Param1519	1519	Xtender ON (AUX 2)	BOOL
Param1544	1544	Remote entry (AUX 2)	BOOL
Param1334	1334	Battery undervoltage alarm (AUX 2)	BOOL
Param1335	1335	Battery overvoltage (AUX 2)	BOOL
Param1336	1336	Inverter or Smart-Boost overload (AUX 2)	BOOL
Param1337	1337	Overtemperature (AUX 2)	BOOL
Param1521	1521	No overtemperature (AUX 2)	BOOL
Param1339	1339	Active charger (AUX 2)	BOOL
Param1340	1340	Active inverter (AUX 2)	BOOL
Param1341	1341	Active Smart-Boost (AUX 2)	BOOL
Param1342	1342	AC input presence but with fault (AUX 2)	BOOL
Param1343	1343	AC input presence (AUX 2)	BOOL
Param1344	1344	Transfer contact ON (AUX 2)	BOOL
Param1345	1345	AC out presence (AUX 2)	BOOL
Param1346	1346	Bulk charge phase (AUX 2)	BOOL
Param1347	1347	Absorption phase (AUX 2)	BOOL
Param1348	1348	Equalization phase (AUX 2)	BOOL
Param1350	1350	Floating (AUX 2)	BOOL
Param1351	1351	Reduced floating (AUX 2)	BOOL
Param1352	1352	Periodic absorption (AUX 2)	BOOL
Param1602	1602	AC-in energy quota (AUX2)	BOOL

Param1354	1354	Use dynamic compensation of battery level (AUX 2)	BOOL
Param1355	1355	Battery voltage 1 activate (AUX 2)	BOOL
Param1356	1356	Battery voltage 1 (AUX 2)	FLOAT
Param1357	1357	Delay 1 (AUX 2)	FLOAT
Param1358	1358	Battery voltage 2 activate (AUX 2)	BOOL
Param1359	1359	Battery voltage 2 (AUX 2)	FLOAT
Param1360	1360	Delay 2 (AUX 2)	FLOAT
Param1361	1361	Battery voltage 3 activate (AUX 2)	BOOL
Param1362	1362	Battery voltage 3 (AUX 2)	FLOAT
Param1363	1363	Delay 3 (AUX 2)	FLOAT
Param1364	1364	Battery voltage to deactivate (AUX 2)	FLOAT
Param1365	1365	Delay to deactivate (AUX 2)	FLOAT
Param1517	1517	Deactivate if battery in floating phase (AUX 2)	BOOL
Param1367	1367	Inverter power level 1 activate (AUX 2)	BOOL
Param1368	1368	Power level 1 (AUX 2)	FLOAT
Param1369	1369	Time delay 1 (AUX 2)	FLOAT
Param1370	1370	Inverter power level 2 activate (AUX 2)	BOOL
Param1371	1371	Power level 2 (AUX 2)	FLOAT
Param1372	1372	Time delay 2 (AUX 2)	FLOAT
Param1373	1373	Inverter power level 3 activate (AUX 2)	BOOL
Param1374	1374	Power level 3 (AUX 2)	FLOAT
Param1375	1375	Time delay 3 (AUX 2)	FLOAT
Param1376	1376	Inverter power level to deactivate (AUX 2)	FLOAT
Param1377	1377	Time delay to deactivate (AUX 2)	FLOAT
Param1457	1457	Contact activated with the temperature of battery (AUX 2)	BOOL
Param1458	1458	Contact activated over (AUX 2)	FLOAT
Param1459	1459	Contact deactivated below (AUX 2)	FLOAT
Param1442	1442	Contact activated with the SOC 1 of battery (AUX 2)	BOOL
Param1443	1443	Contact activated below SOC 1 (AUX 2)	FLOAT
Param1590	1590	Delay 1 (AUX 2)	FLOAT
Param1591	1591	Contact activated with the SOC 2 of battery (AUX 2)	BOOL
Param1592	1592	Contact activated below SOC 2 (AUX 2)	FLOAT
Param1593	1593	Delay 2 (AUX 2)	FLOAT
Param1594	1594	Contact activated with the SOC 3 of battery (AUX 2)	BOOL
Param1595	1595	Contact activated below SOC 3 (AUX 2)	FLOAT
Param1596	1596	Delay 3 (AUX 2)	FLOAT
Param1444	1444	Contact deactivated over SOC (AUX 2)	FLOAT
Param1597	1597	Delay to deactivate (AUX 2)	FLOAT
Param1598	1598	Deactivate if battery in floating phase (AUX 2)	BOOL
Param1513	1513	Security, maximum time of contact (AUX 2)	BOOL
Param1515	1515	Maximum time of operation of contact (AUX 2)	FLOAT
Param1570	1570	Reset all settings (AUX 2)	INT32

Param1491	1491	Generator control active	BOOL
Param1493	1493	Number of starting attempts	FLOAT
Param1492	1492	Starter pulse duration (with AUX2)	FLOAT
Param1494	1494	Time before a starter pulse	FLOAT
Param1574	1574	Main contact hold/interrupt time	FLOAT
Param1545	1545	Remote entry active	ENUM
Param1538	1538	Prohibits transfert relay	BOOL
Param1539	1539	Prohibits inverter	BOOL
Param1540	1540	Prohibits charger	BOOL
Param1541	1541	Prohibits Smart-Boost	BOOL
Param1542	1542	Prohibits grid feeding	BOOL
Param1566	1566	Using a secondary value for the maximum current of the AC source	BOOL
Param1567	1567	Second maximum current of the AC source (Input limit)	FLOAT
Param1554	1554	Decrease of the max. current of the source with input voltage activated by command entry	BOOL
Param1576	1576	ON/OFF command	BOOL
Param1578	1578	Activated by AUX1 state	BOOL
Param1579	1579	Prohibits battery priority	BOOL
Param1600	1600	Disable minigrid mode	BOOL
Param1603	1603	Activate REG I, current control	BOOL
Param1296	1296	Batteries priority as energy source	BOOL
Param1297	1297	Battery priority voltage	FLOAT
Param1565	1565	Buzzer alarm duration	FLOAT
Param1130	1130	After battery undervoltage	BOOL
Param1304	1304	Number of batteries undervoltage allowed before definitive stop	FLOAT
Param1404	1404	Time period for batteries undervoltages counting	FLOAT
Param1305	1305	Number of batteries critical undervoltage allowed before definitive stop	FLOAT
Param1405	1405	Time period for critical batteries undervoltages counting	FLOAT
Param1131	1131	After battery overvoltage	BOOL
Param1132	1132	After inverter or Smart-Boost overload	BOOL
Param1533	1533	Delay to restart after an overload	FLOAT
Param1134	1134	After overtemperature	BOOL
Param1111	1111	Autostart to the battery connection	BOOL
Param1485	1485	Prohibited ground relay	BOOL
Param1486	1486	Continuous neutral	BOOL
Param1616	1616	Use of functions limited to a number of days	BOOL
Param1391	1391	Number of days without functionalitie's restrictions	FLOAT
Param1617	1617	Transfer relay disabled after timeout	BOOL
Param1618	1618	Inverter disabled after timeout	BOOL
Param1619	1619	Charger disabled after timeout	BOOL
Param1620	1620	Smart-Boost disabled after timeout	BOOL
Param1621	1621	Grid feeding disabled after timeout	BOOL

Param1550	1550	Parameters saved in flash memory	BOOL
Param1415	1415	Global ON of the system	INT32
Param1399	1399	Global OFF of the system	INT32
Param1468	1468	Reset of all the inverters	INT32
Param1283	1283	Integral mode	BOOL
Param1461	1461	Multi inverters allowed	BOOL
Param1462	1462	Multi inverters independents. Need reset {1468}	BOOL
Param1555	1555	Battery cycle synchronized by the master	BOOL
Param1547	1547	Allow slaves standby in multi-Xtender system	BOOL
Param1571	1571	Splitphase: L2 with 180 degrees phaseshift	BOOL
Param1558	1558	Separated Batteries	BOOL
Param1437	1437	Minigrid compatible	BOOL
Param1577	1577	Minigrid with shared battery energy	BOOL
Param1556	1556	is central inverter in distributed minigrid	BOOL
Param1127	1127	Grid feeding allowed	BOOL
Param1523	1523	Max grid feeding current	FLOAT
Param1524	1524	Battery voltage target for forced grid feeding	FLOAT
Param1525	1525	Forced grid feeding start time	INT32
Param1526	1526	Forced grid feeding stop time	INT32
Param1610	1610	Use of the defined phase shift curve for injection	BOOL
Param1622	1622	Cos phi at P = 0%	FLOAT
Param1623	1623	Cos phi at the power defined by param {1613}	FLOAT
Param1613	1613	Power of the second cos phi point in % of Pnom	FLOAT
Param1624	1624	Cos phi at P = 100%	FLOAT

1.3. Default serial port configuration

Default inverter configuration: 38400 8-E-1

Serial port configuration tag description (RS-232):

COM0	StuderPort**Serial**comm:com:0;baudrate=38400;parity=even;blocking=on;autocts=off;autorts=off
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1.4. Slave configuration

For each Studer device a tag named INV n (e.g. : INV1) must be defined, where n is the number of device starting from 1.

Description of INV n tag is used by the driver to read some parameters, as described below :

*commname**nodeAddress**timeoutMs*

Example :

INV1	COM0**101**2000
INV2	COM0**102**2000

INV1 is read on port COM0, the node address is 101 and the timeout for each request is 2 seconds (default timeout).

1.5. Tested Device

- Studer Innotec Xcom-232i communication module.